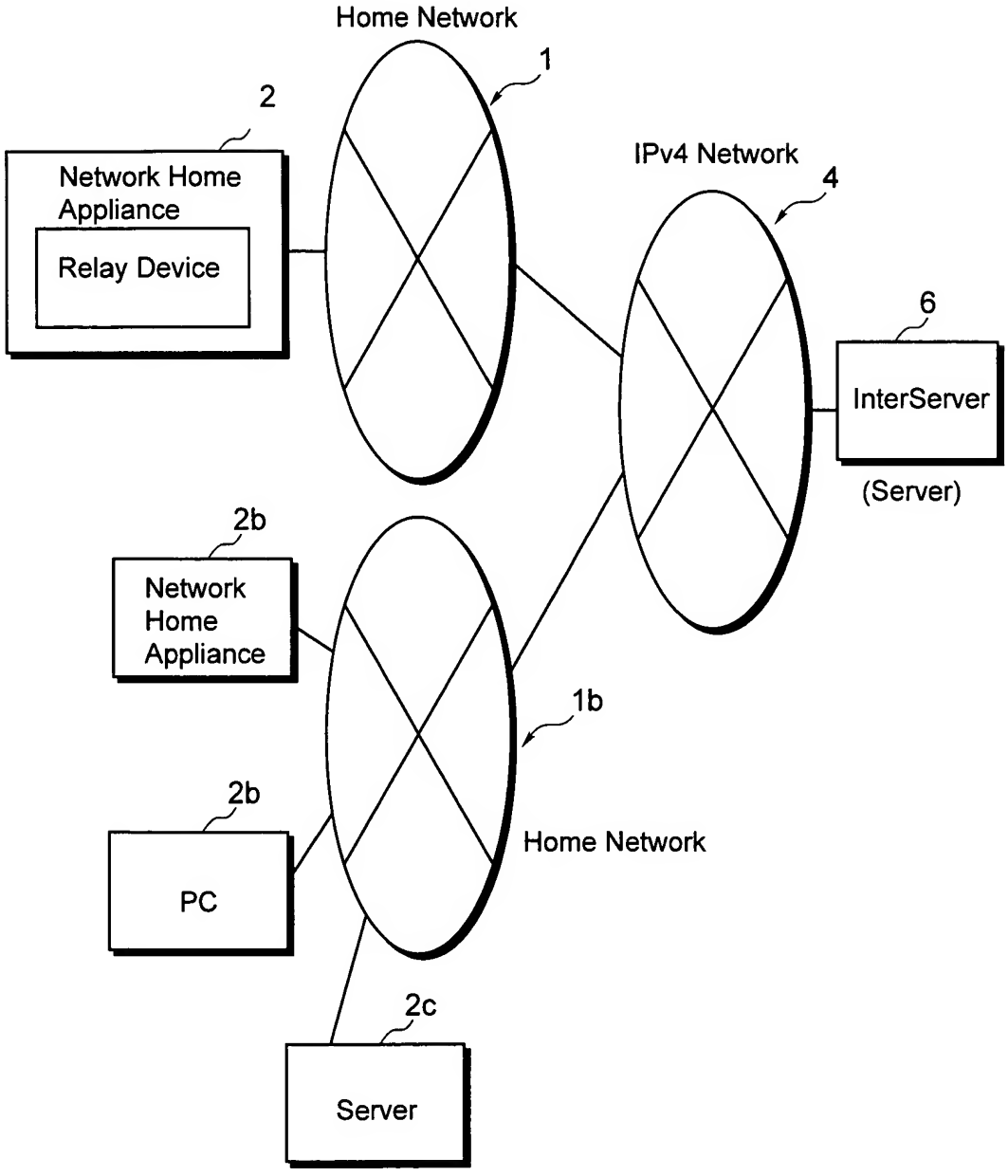
Home Network
1
2
Network Home Appliance
Relay Device
IPv4 Network
4
6
InterServer
(Server)
2b
Network Home Appliance
1b
2b
PC
Home Network
2c
Server

FIG. 1

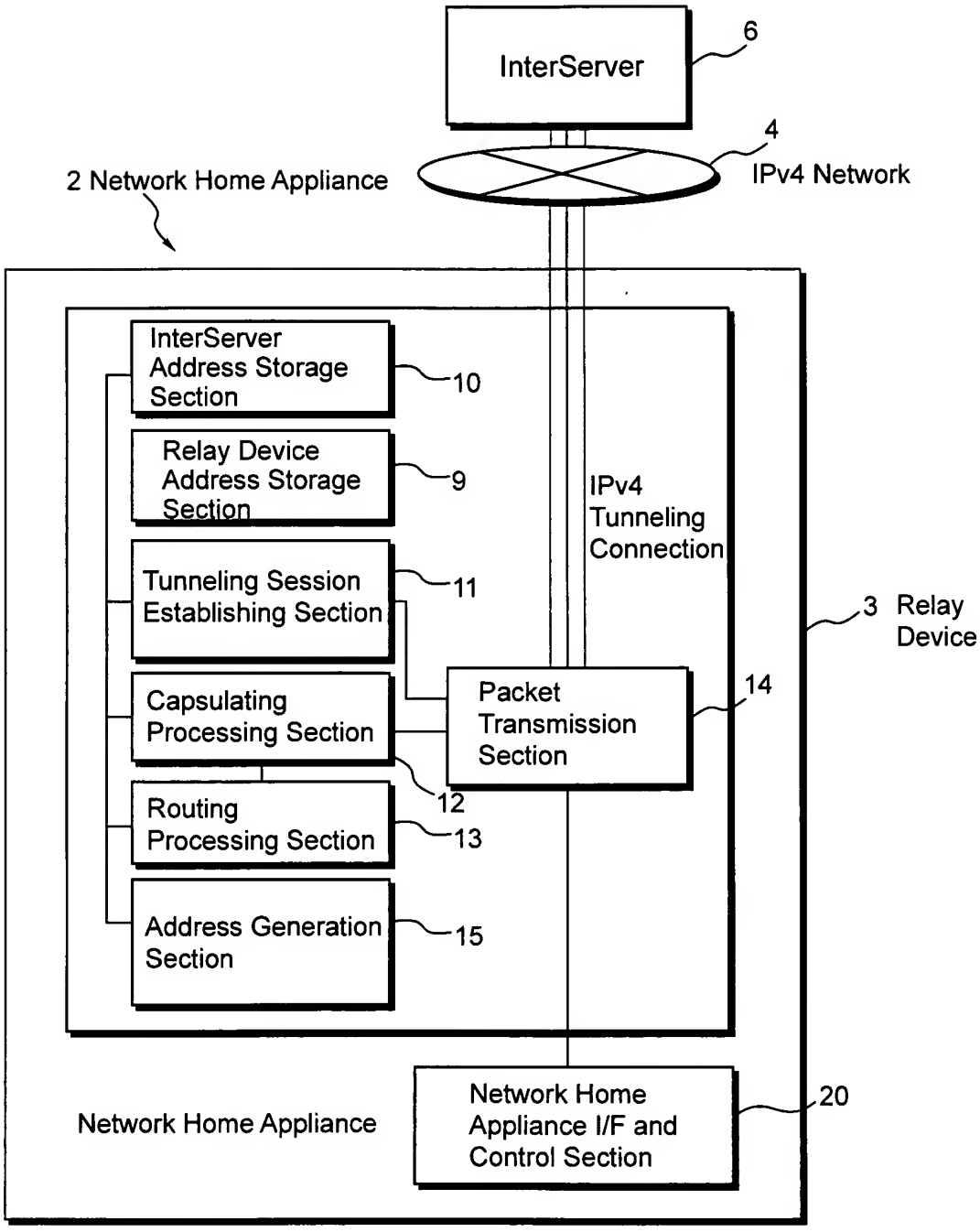
InterServer
6
4
IPv4 Network
2 Network Home Appliance
InterServer Address Storage Section
10
Relay Device Address Storage Section
9
IPv4 Tunneling Connection
Tunneling Session Establishing Section
11
3 Relay Device
Capsulating Processing Section
Packet Transmission Section
14
12
Routing Processing Section
13
Address Generation Section
15
Network Home Appliance
Network Home Appliance I/F and Control Section
20

FIG. 2

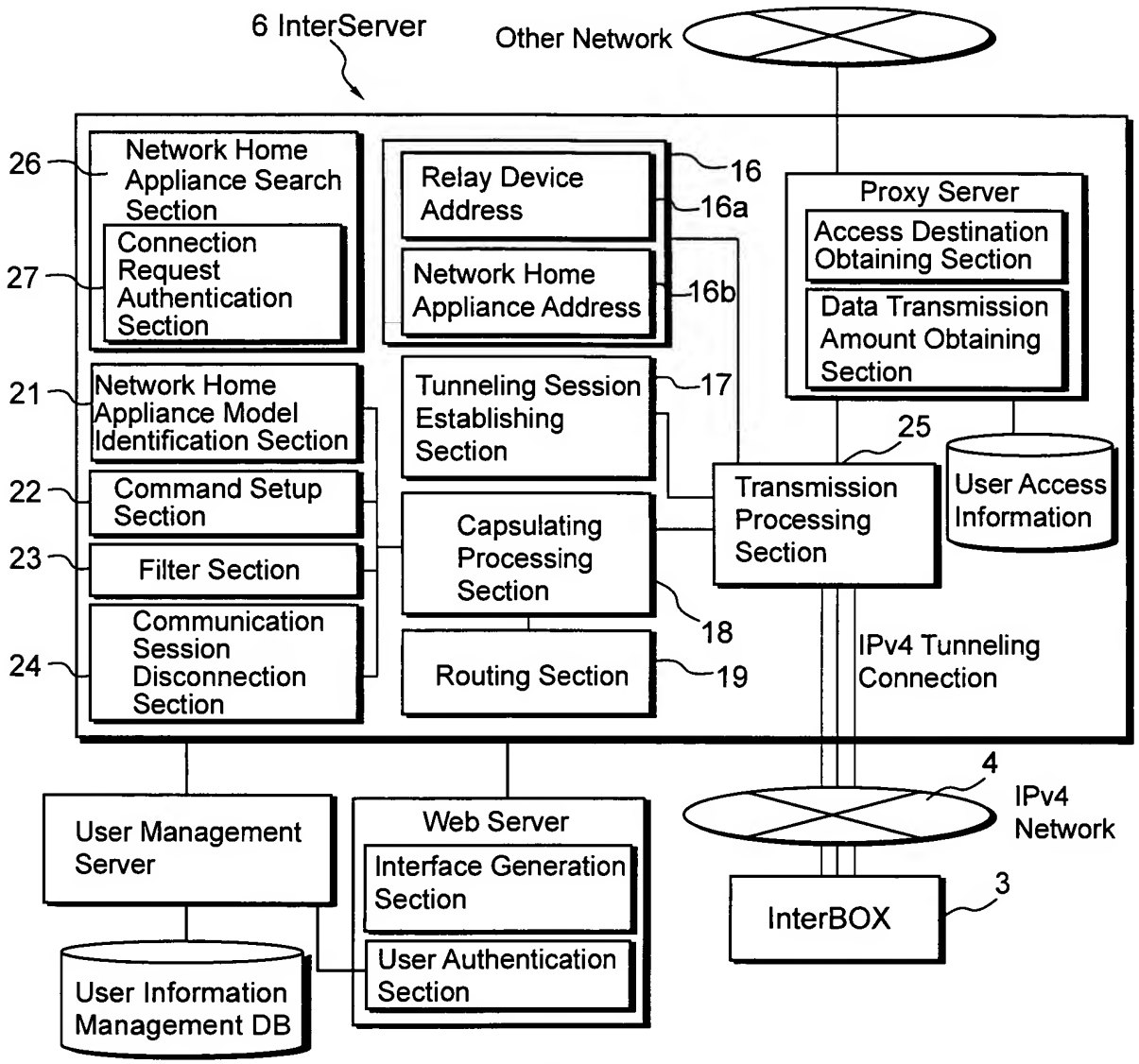
6 InterServer
Other Network
26
Network Home Appliance Search Section
27
Connection Request Authentication Section
21
Network Home Appliance Model Identification Section
22
Command Setup Section
23
Filter Section
24
Communication Session Disconnection Section
Relay Device Address
16
16a
Network Home Appliance Address
16b
Tunneling Session Establishing Section
17
Capsulating Processing Section
18
Routing Section
19
Proxy Server
Access Destination Obtaining Section
Data Transmission Amount Obtaining Section
25
Transmission Processing Section
User Access Information
IPv4 Tunneling Connection
4
IPv4 Network
InterBOX
3
User Management Server
Web Server
Interface Generation Section
User Authentication Section
User Information Management DB

FIG. 3A

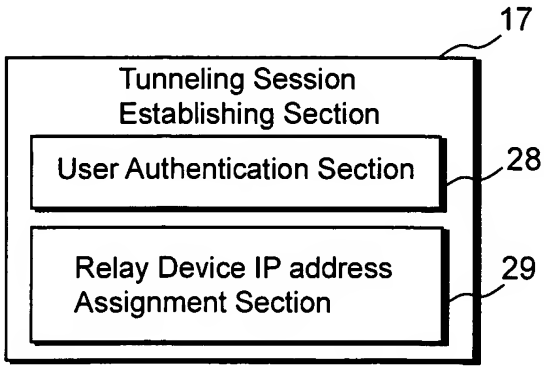
17
Tunneling Session Establishing Section
User Authentication Section
28
Relay Device IP address Assignment Section
29

FIG. 3B

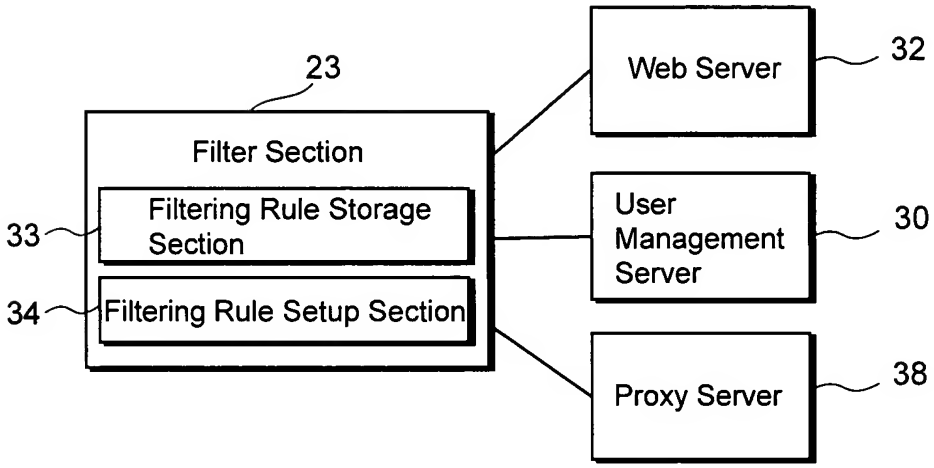
23
Filter Section
Filtering Rule Storage Section
33
Filtering Rule Setup Section
34
Web Server
32
User Management Server
30
Proxy Server
38

FIG. 4

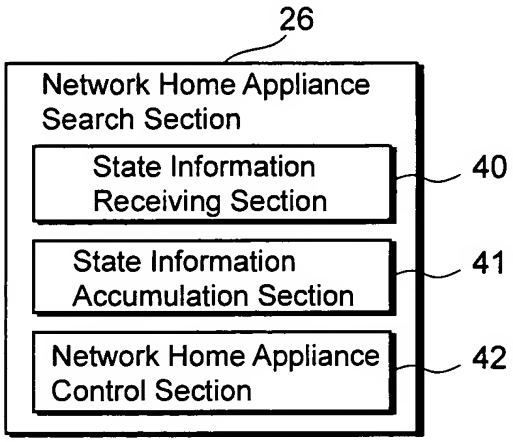
26
Network Home Appliance Search Section
State Information Receiving Section
40
State Information Accumulation Section
41
Network Home Appliance Control Section
42

FIG. 6

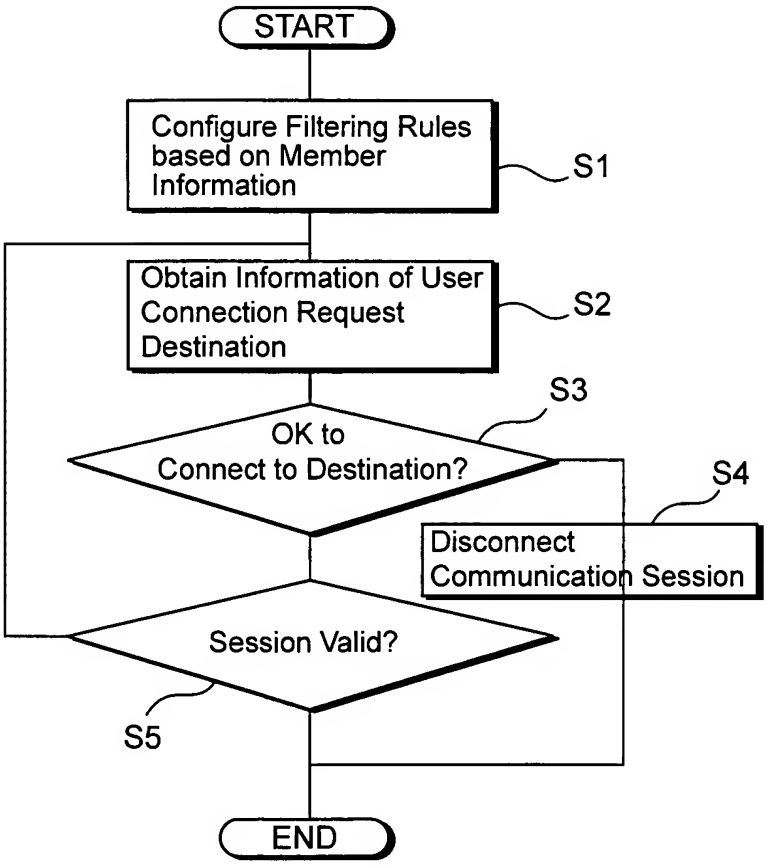
START
Configure Filtering Rules based on Member Information
S1
Obtain Information of User Connection Request Destination
S2
S3
OK to Connect to Destination?
S4
Disconnect Communication Session
Session Valid?
S5
END

FIG. 5

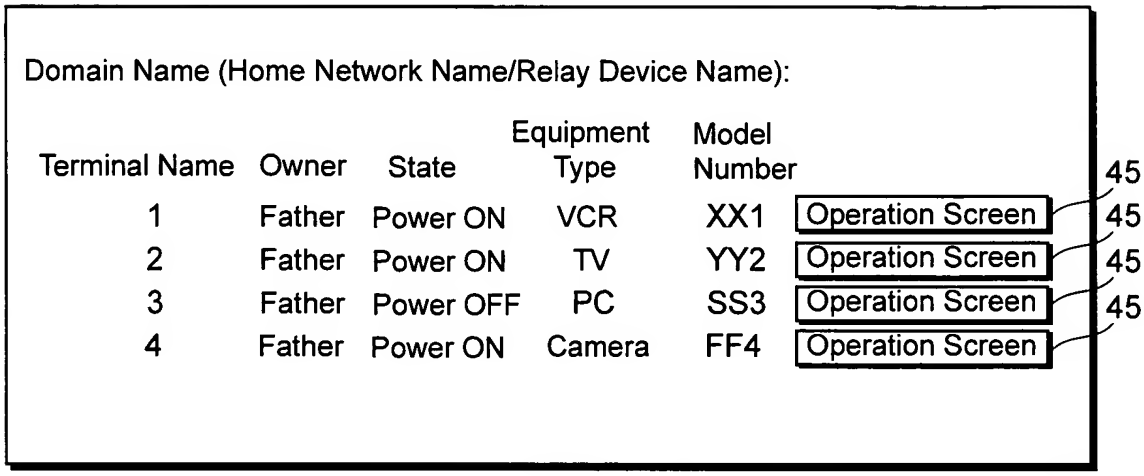
Domain Name (Home Network Name/Relay Device Name):
Terminal Name
Owner
State
Equipment Type
Model Number
1 Father Power ON VCR XX1 Operation Screen
2 Father Power ON TV YY2 Operation Screen
3 Father Power OFF PC SS3 Operation Screen
4 Father Power ON Camera FF4 Operation Screen
45
45
45
45

FIG. 8

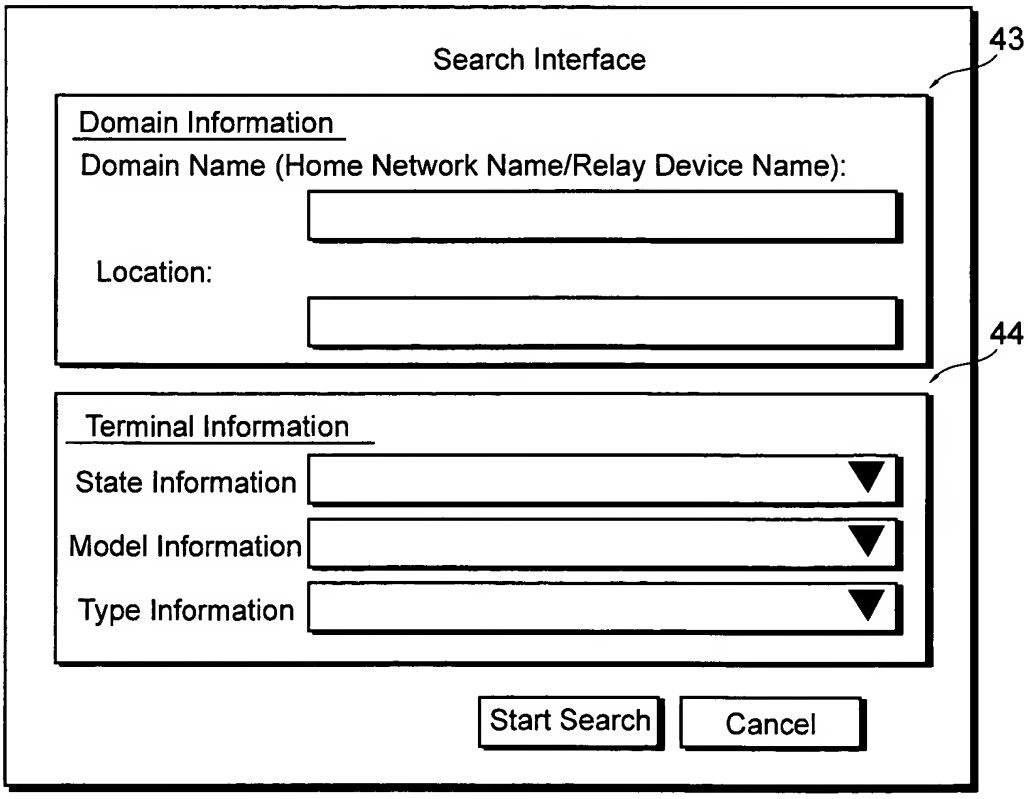
Search Interface
43
Domain Information
Domain Name (Home Network Name/Relay Device Name):
Location:
44
Terminal Information
State Information
Model Information
Type Information
Start Search
Cancel

FIG. 7

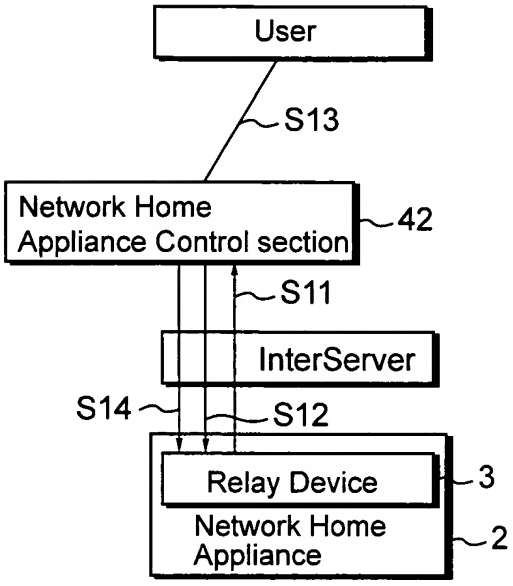
User
S13
Network Home Appliance Control section
42
S11
InterServer
S14
S12
Relay Device
3
Network Home Appliance
2

FIG. 9

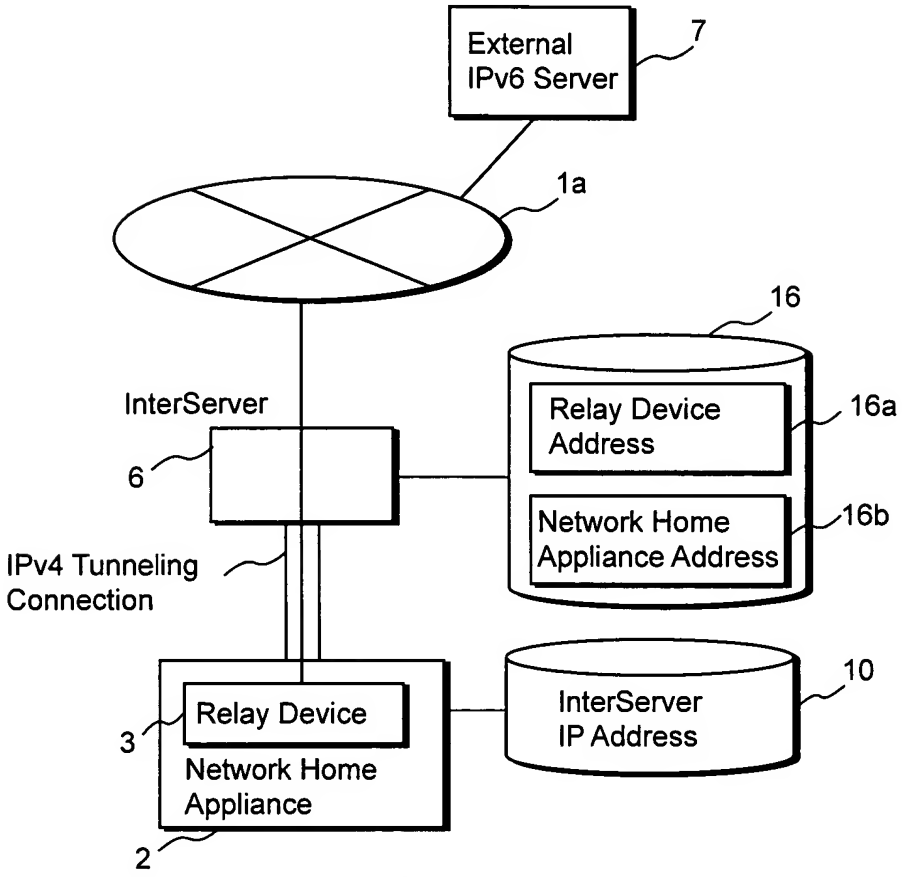
External
IPv6 Server
7
1a
16
InterServer
6
Relay Device
Address
16a
Network Home
Appliance Address
16b
IPv4 Tunneling
Connection
Relay Device
3
Network Home
Appliance
2
InterServer
IP Address
10

FIG. 10

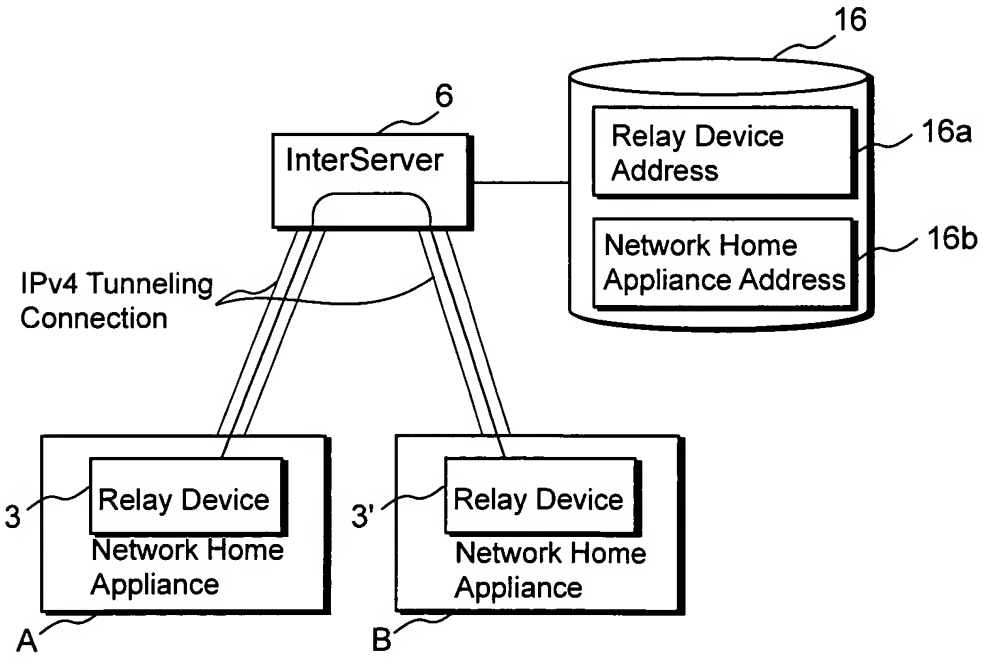
16
6
InterServer
Relay Device
Address
16a
Network Home
Appliance Address
16b
IPv4 Tunneling
Connection
3
Relay Device
Network Home
Appliance
A
3'
Relay Device
Network Home
Appliance
B

FIG. 11

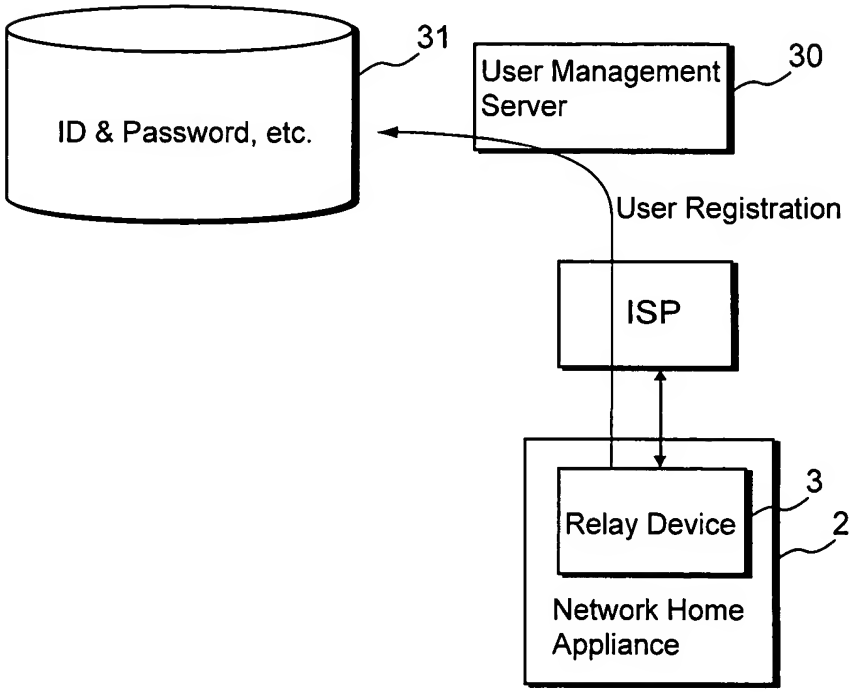
31
ID & Password, etc.
User Management Server
30
User Registration
ISP
3
Relay Device
2
Network Home Appliance

FIG. 12

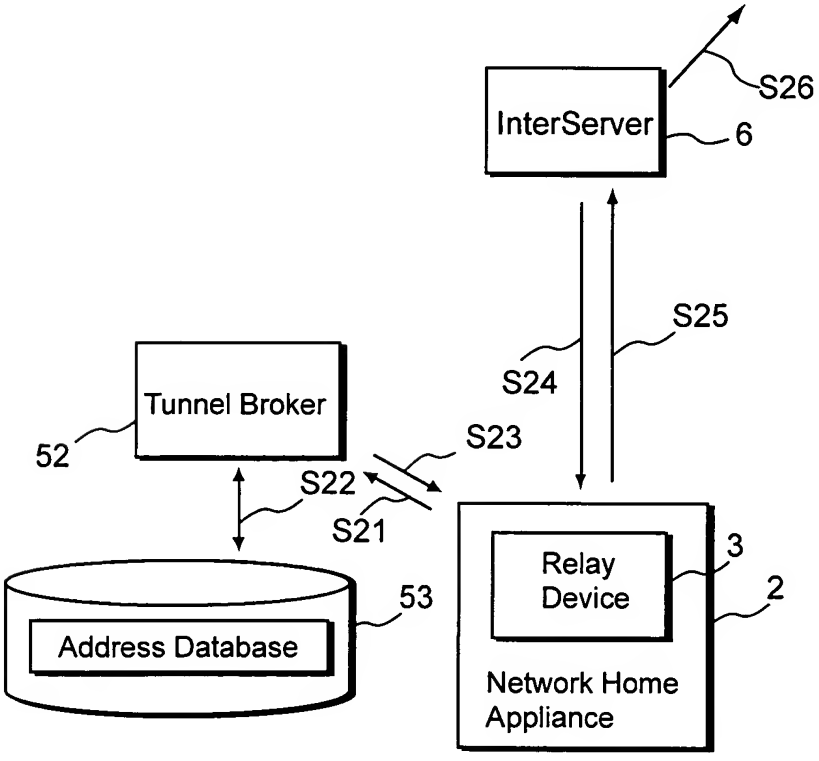
S26
InterServer
6
S25
S24
Tunnel Broker
52
S23
S22
S21
53
Address Database
3
Relay Device
2
Network Home Appliance

FIG. 13